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U.S. NUCLEAR REGULATORY COMMISSION

[Docket No. 040-8943; NRC-2008-0208]

License Renewal of Crow Butte ISR, Uranium In Situ Recovery Project

AGENCY: Nuclear Regulatory Commission.

ACTION: Environmental assessment and finding of no significant impact; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is considering renewal of Crow Butte Resources, Inc. (CBR or the applicant), Source Materials License SUA-1534 for continued uranium production operations and in situ recovery (ISR) of uranium at the Crow Butte Project in Crawford, Nebraska.

DATES: The environmental assessment and finding of no significant impact are available as of **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID NRC-2008-0208 when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID NRC-2008-0208. Address questions about NRC dockets to Carol Gallagher;

telephone: 301-287-3422; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**

You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdresource@nrc.gov. The ADAMS accession number for each document referenced in this document (if that document is available in ADAMS) is provided the first time that a document is referenced. For the convenience of the reader, the ADAMS accession numbers are provided in a table in the "Availability of Documents" section of this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Nathan Goodman, Office of Nuclear Material Safety and Safeguards, telephone: 301-415-2703, e-mail: Nathan.Goodman@nrc.gov; U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

I. Introduction.

The NRC is considering renewal of CBR's Source Materials License SUA-1534 for continued uranium production operations and ISR of uranium at the Crow Butte Project in Crawford, Nebraska. The applicant is proposing continued ISR operations and processing materials into yellowcake to be shipped for conversion. The NRC staff has prepared an Environmental Assessment (EA) in support of this proposed license renewal, in accordance with the requirements in Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR). The NRC staff has also completed a safety evaluation of the proposed license renewal, pursuant to 10 CFR Part 40, and the results of the safety evaluation are documented in a separate Safety Evaluation Report (SER), ADAMS Accession No. ML14149A433. If approved, the NRC will issue the renewed license following the publication of this notice. The new license will also be made publicly available in ADAMS.

II. Environmental Assessment Summary.

On November 27, 2007, CBR submitted an application to the NRC to extend the current NRC License SUA-1534 for an additional 10 years of operation (ADAMS Accession Nos. ML073480266, ML073480272, ML073480274, and ML073480267). The proposed action would permit CBR to continue ISR operations and yellowcake production at the CBR facility. The ISR operations require an extraction step and a uranium recovery step. Extraction is accomplished by installing a series of injection wells through which barren lixiviant (a mixture of groundwater charged with oxygen and bicarbonate) is pumped into an underground geological formation containing uranium deposits (the ore body). Corresponding production wells and pumps promote flow through the ore body and allow for the collection of uranium-rich pregnant lixiviant.

Uranium is removed from the pregnant lixiviant by ion exchange, and then from the ion exchange resin by elution. After the uranium is removed, the lixiviant can then be recharged and reinjected into the ore body to repeat the extraction cycle. The elution liquid containing the uranium (the “pregnant” eluant) is then processed by precipitation, dewatering, and drying to produce a transportable form of uranium (yellowcake).

The NRC staff has assessed the environmental impacts associated with the request from CBR to renew its Source Materials License No. SUA-1534 for CBR’s ISR facility located in Crawford, Nebraska, as well as the no action alternative, and has documented the results in this EA. The NRC staff performed its environmental review in accordance with the requirements in 10 CFR Part 51. In conducting the environmental review, the NRC staff considered information in the license renewal application (LRA); information in the responses to the NRC staff’s requests for additional information (RAIs); communications with CBR, the Nebraska State Historic Preservation Office (SHPO), and the Nebraska Department of Environmental Quality (NDEQ); information from the NRC staff site visits and inspections; consultation with Native American Tribes and the public; and the NRC staff’s independent analysis.

In this EA, the NRC staff evaluated the potential environmental impacts of the proposed action and the no action alternative on the affected environment, specifically: land use; historical and cultural resources; visual and scenic resources; air quality; geology and soils; water resources; ecological resources; socioeconomics; environmental justice; noise; transportation; and public and occupational health and safety.

The NRC staff evaluated the potential impacts and categorized the impacts as follows:

- **SMALL**—environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

- MODERATE—environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
- LARGE—environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

Additionally, the NRC staff analyzed the cumulative impacts from past, present, and reasonably foreseeable future actions when combined with the environmental impacts from the proposed action. For cumulative impacts, the NRC staff evaluated whether these actions would have a significant impact on each resource area.

The NRC staff has determined that renewal of Source Material License SUA-1534 will be consistent with the requirements of 10 CFR Part 40 and will not have long-term detrimental impacts on the environment. The following statements summarize the conclusions resulting from the staff's environmental assessment:

- 1) Impacts for all resource areas were determined to be SMALL.
- 2) Approval of the proposed action would not alter the current land use at the CBR facility. No new construction, including roads, at the CBR facility is anticipated. Traffic is not expected to increase from current conditions.
- 3) The NRC staff has determined that impacts to water resources, discussed in detail in Sections 4.6 and 4.13.6 of the EA, would not be significant from the relicensing of the CBR facility. Under the license renewal, the facility would continue to operate in accordance with the State and Federal requirements that minimize impacts to water resources.
- 4) The proposed action would have SMALL impacts to cultural resources. Consultation was completed between the NRC and Native American Tribes in accordance with Section 106 of the National Historic Preservation Act (NHPA), and there were no sites considered eligible for

listing in the National Register of Historic Places. Additionally, there will be no disproportionately high and adverse impacts on minority and low-income populations.

5) Impacts to threatened and endangered species are not expected from the relicensing of the CBR facility because no new construction or land disturbance is anticipated.

6) There would be no impacts to the public pertaining to radiological and non-radiological health associated with relicensing the CBR facility. Under the license renewal, the facility would continue to operate in accordance with the State and Federal requirements that minimize radiological and non-radiological impacts.

7) The NRC staff analyzed potential cumulative impacts and concluded that there would not be significant adverse cumulative impacts to any resource area.

III. Finding of No Significant Impact (FONSI).

Based on its review of the proposed action, in accordance with the requirements in 10 CFR Part 51, the NRC staff has concluded that the proposed action, renewal of NRC Source Materials License No. SUA-1534 for CBR's ISR facility located in Crawford, Nebraska, will not have a significant impact on the resource areas discussed in this EA and will not significantly affect the quality of the human environment. Therefore, the NRC staff has determined, pursuant to 10 CFR 51.31, that preparation of an environmental impact statement is not required for the proposed action and a FONSI is appropriate.

IV. Availability of Documents.

The documents identified in the following table are available to interested persons as indicated. For additional information on accessing ADAMS, see the ADDRESSES section of this document.

Document	ADAMS Accession Number
License Renewal Application	ML073480266, ML073480272, ML073480274, ML073480267
Applicant's Response to Environmental RAIs	ML091980473
Section 106 Documents	
NRC Staff Documentation of Section 106 Review Findings	ML13260A566
Traditional Cultural Property Survey Report by Santee Sioux Nation and Crow Nation	ML13093A123
NRC Staff letter to Nebraska SHPO requesting concurrence on completion of Section 106 process	ML13105A359
Nebraska SHPO response to concurrence letter	ML13266A266
Environmental Assessment	ML14288A517
Safety Evaluation Report	ML14149A433

The Section 106 documents listed in the above table are also publicly available on the NRC website at: <http://www.nrc.gov/info-finder/materials/uranium/licensed-facilities/crow-butte/section-106-license-renewal-docs.html>.

Dated at Rockville, Maryland, this 24th day of October, 2014.

For the Nuclear Regulatory Commission.

Marissa G. Bailey, Director,
Division of Fuel Cycle Safety, Safeguards
and Environmental Review,
Office of Nuclear Material Safety
and Safeguards.

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